

THE CENTURY MAGAZINE.

VOL. XXXI.

MARCH, 1886.

No. 5.

ITALY FROM A TRICYCLE.

"They are a couple of far-country men, and, after their mode, are going on pilgrimage."



AN ITALIAN TANDEM.

WE staid in Florence three days before we started on our pilgrimage to Rome. We needed a short rest. The railway journey straight through from London had been unusually tiresome because of our tricycle. From the first mention of our proposed pilgrimage, kind friends in England had warned us that on the way to Italy our tricycle would be a burden worse than the Old Man of the Sea. Porters, guards, and custom-house officials would look upon it as lawful prey, and we would pay more to get it to Italy than it had cost in the beginning.

Our first experience, at the station at Holborn Viaduct, seemed to confirm their warnings. We paid eight shillings to have the tricycle carried to Dover, and crossing the Channel, we paid five-and-sixpence more, and the sailors told us condolingly we would have an awful time of it in the custom-house at Calais. This, however, turned out a genuine seaman's yarn. The tricycle was examined carefully, but to be admired, not valued. "*C'est bien fait, ça!*" one guard declared with appreciation, and others playfully urged him to mount it. To make a long story short, our friends proved false prophets. From Calais to Florence we only paid nine francs freight and thirty-five francs duty on entering Italy. Unfortunately we never knew what might be about to happen, and it was not until the cause of our anxiety was safe in Florence that our mental burden was taken away.

But here were more friends who called our pilgrimage a desperate journey, and asked if we had considered what we might meet with in the way we were going. There was the cholera! But we would not go near the stricken provinces, we told them. Our road, they persisted, lay through valleys reeking with malaria until November at least. We would not reach these valleys before November, was our reply. But did we know that we would pass through lonely districts where escaped convicts roamed abroad, and in and out of villages where fleas were like unto a plague of Egypt, and good food as scarce as in the wilderness? Perhaps it was because so little had come of the earlier prophecies that we gave slight heed to these, and on October 16th, the third morning after our arrival, we rode forth, *sans* flea-powder or brandy, *sans* quinine or beef-extract, right into the jaws of death.

The *padrone* who had helped us with our baggage, and Mr. Mead, the one friend who foretold pleasure, stood at the door of the Hotel Minerva to see us off. The sunlight streamed over the Piazza Santa Maria Novella, and on the beggars on the church-steps, and on the cabmen who good-naturedly cried "*Niente vettura!*" (No carriage for you), as we wheeled slowly on, crossing the Via Tornabuoni, by the Palazzo Strozzi, to the crowded Ponte Vecchio, by the Via de' Bardi, through the Borgo San Jacopo along the Lung' Arno,

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iant American school, which have frequently been sold as cheaply as fifty cents.

Rising from details like these to a consideration of the general question, it is not difficult to show that the extension of copyright will not seriously increase the price of books. France, for example, is the country giving perhaps the fullest copyright protection to authors of all nations, without distinction. Literature prospers in France, and French authors are rewarded and honored; there are perhaps half-a-dozen French novelists who can be sure of a sale of fifty thousand copies for any new novel they may write. Yet nowhere

are books cheaper than in France; and books have been cheap in France since Michel-Lévy wrought his literary revolution, now nearly half a century ago. A French novel appears generally in one volume at seventy cents, and it is often reprinted later in cheaper form for twenty cents. All the tales of that most delightful of story-tellers, the elder Dumas, can be bought in Paris for twenty cents a volume. American publishing methods are more closely akin to French than to English; and in America as in France the reading public has formed the habit of cheap books, to which no publisher would now dare to run counter.

OPEN LETTERS.

Christian Union.

LETTERS FROM PRESBYTERIAN DIVINES.

From Rev. Dr. Crosby.

THE Rev. Dr. Shields has prescribed a very simple remedy for church separation among Protestants; namely, union on the basis of the Protestant Episcopal liturgy. Coming from a Presbyterian, this is very complimentary to our Episcopal brethren, and very magnanimous for a Princeton man. We have heard of other easy schemes to the same end, as, for example, union on the basis of the Solemn League and Covenant.

But the plan is too easy and simple; that is, it is so easy and simple for one denomination that it would be very hard for the rest. The one denomination that would have to do nothing would enjoy the operation, but those that had to do all the changing might find it a very severe process. We only know of two Presbyterian ministers who could be counted on as venturing on this one-sided consolidation—Dr. Shields himself and my excellent friend Dr. Hopkins. I know a little about Presbyterians, and of them only I speak. They are not in love with the Episcopal liturgy. They cannot extol it in the panegyric of Dr. Shields. They like parts of it very well, and count most of it excellent English, but they object to a great deal in it, and could never make use of it.

1. They object to the breaking up of prayer into little fragments, each beginning with an invocation and ending with a formal peroration. They consider this style of prayer too artificial and leading to a mechanical worship.

2. They object to the open-eyed reading of prayer, as tending to withdraw the mind from the unseen.

3. They object to the stereotyped prayer, however excellent.

4. They object to the Litany *in toto*, as putting the believer far off from God, calling on him to *spare* him as a miserable sinner, when, as an accepted child of God, he should reverently call upon God as a dear Father near at hand, ready to bestow his gifts abundantly. The Litany has no feature suited to the "heir of God or joint-heir with Christ." Many of the features of the Litany (like the prayer against sudden death) are but relics of Romanism, and its repetitions are unmeaning.

5. They object to the absolution *declaration*, which is only a toning-down of the Roman absolution *bestowal*. No minister is authorized to pronounce an absolution on the penitent, any more than one who is not a minister. That grand truth is for everybody to know and to proclaim. The minister has no prerogative here, as this section of the prayer-book would imply. It is a remnant of the priestly idea of a Christian minister, while Presbyterians hold that all believers are equally priests, and that a minister is only an ordained leader and ruler.

6. They object to the repetitions of the Lord's Prayer, as if it were a magical formula, which was effective by frequent repetition.

7. They object to the clear remnants of transubstantiation in the Communion Service and of baptismal regeneration in the Baptismal Service—two doctrines which Presbyterians abhor.

With such objections on the part of Presbyterians (in which, I doubt not, Baptists, Methodists, and Congregationalists would largely concur), how can Dr. Shields's plan of union on the Episcopal liturgy be of avail?

The truth is that Christians cannot be made to agree on the points referred to, nor on secondary matters of doctrine and church government, nor is it desirable that they should agree. Down deep in the fundamentals of Christ's divinity, incarnation, sacrifice for sin, the gift of the Spirit, faith, repentance, the new life, Christians of all evangelical creeds and customs agree, and *on these they can unite*, but on nothing else. A visible union can be brought about only with the liberty of each Christian or group of Christians holding his or their differences in creed and custom. The union would be by periodical congress for prayer and conference, and by coöperative work in Christian associations and alliances for general effort against falsehood and infidelity. This union is feasible, and is, indeed, beginning to be a fact through more enlightened Christendom.

I am an out-and-out Presbyterian, but I find it a delight to work with my Episcopal friends in their admirable Church Temperance Society; I have worked side by side with Baptists and Methodists in City Missions and in Young Men's Christian Associations, and it never occurred to any of us to think of denominational differences; I am a member of two ministerial organizations where ministers of all the Protestant

denominations meet every week or fortnight, and the ties of friendship and esteem are equally strong between all. Here is Christian union of the highest sort. In maintaining and fostering such brotherhood we shall arrive at the perfection of Christian union, without touching the individual differences of view regarding the non-essentials of religion; and, furthermore, such a course will inevitably operate in making us all slough off such differences as are inimical in their spirit to true Christian fellowship. It will promote a spirit of yielding as against the spirit of mere prejudice, and establish true liberty in conjunction with solid and effective union.

The liturgy scheme is very pretty, but there is no substance in it. It is too romantic for plain people who wish for reality. It is a holding together the beams of a house with Spalding's glue. It looks very fair while it sticks, but a breath of the zephyr will bring chaos. We must have something that works from the heart outwards if we would have strength and permanency. That which is plastered on from without is deceptive and transitory.

Howard Crosby.

From Professor Hodge.

THERE are only two generically distinct doctrines of the Christian Church. The first maintains that it is essentially an organized society, its outward form as well as its informing spirit determined by the constitution originally imposed upon it by Christ, and this outward form preserved, through the succession of its officers, in unbroken organic continuity from the days of the Apostles until now.

The second doctrine maintains that the Church is a general term for the whole body of regenerated men, whether of past, present, or future generations. These are constituted one spiritual body by the indwelling of the Holy Ghost, which unites them to Christ their head, as all the various elements and members of our natural bodies are constituted one by the indwelling of a common soul. The many members of this body being many are one body; and it is all the more one because of the infinitely various relations which the several members sustain to their Lord and to each other, determined by their various natural faculties, historical conditions, and gracious endowments.

A very slight knowledge of history proves that the doctrine of the Church first stated is impossible. It is simply absurd to pretend that any one of the various competing churches of the present or of any former age since the second century is identical in outward form with the societies founded by the Apostles, or that it has preserved its organic continuity intact by an unbroken succession of officers under an unchanged constitution from that age until now. It is, moreover, precisely in the case of those extant churches which most emphasize the absolute necessity of an identity of external form, and of an uninterrupted continuity of succession, that the absurdity of the claim is rendered the most conspicuous and certain, by the facts of their history and the wide contrast existing between their ecclesiastical order and forms of worship and the apostolic literature and monuments. The more thoroughly this theory of the Church, therefore, is put to the test, the more it is found to be inconsistent with all the providential facts of the case.

On the other hand, it is evident that the second doctrine of the Church as above stated is the one which alone justifies the application to it of the common predicates of apostolicity, catholicity, infallibility, perpetuity, and sanctity. The spiritual body is always faithful to the genuine apostolic doctrine in all its essentials; is infallibly preserved from all fatal errors of faith or practice; is set apart from the world as consecrated and morally pure; and endures through all conflicts and changes, as indestructible, and unchangeably one and catholic, embracing in one spiritual union all saints in all parts of the world, in all successive generations.

It is no less visible. When consummated, it is to be the most conspicuously glorious of all created objects, "fair as the moon, clear as the sun, and terrible as an army with banners." It is visible in its essential nature, because it exists in part of men and women living in the flesh, and because these possess a peculiar spiritual nature which is manifested in their lives, so that by the very force of their saintship they are set apart in contrast to the mass of mankind, as "the salt of the earth" and "the light of the world." Moreover, it belongs to the essential nature of this spiritual church, as composed of intrinsically social beings, who by reason of their saintship are loyal servants of their Master in a hostile world, that it everywhere and always tends to express itself in some external organized form, and so render itself the more definitely visible.

This tendency to self-organization is intrinsic, and therefore constant and universal, and acts always spontaneously, springing from the social nature of man, and from the common needs and aspirations of all its members. All the various forms which thence result have been comprehended in God's design, and are necessary for the spiritual development of the Church, and for the accomplishment of the great tasks it has been commissioned to perform. Yet the permanent results of biblical interpretation unite with the history of his providential and gracious guidance of the churches in proving that Christ never intended to impose upon the Church as a whole any particular form of organization. Neither he nor his apostles ever went beyond the suggestion of general principles, and the actual inauguration of a few rudimentary forms. The history of the churches during all subsequent ages shows that these rudimentary forms have been ever changing in correspondence with the changes in their historical conditions. And in exact proportion to the freedom and fruitfulness of the Church's activity in the service of its Master, the more rapidly and flexibly are these organic forms adapted to the conditions of the sphere in which their especial work is appointed. These various denominational forms of the living Church are all one in their essentials, and differ only in their accidents. These accidents have been determined in each case by conditions peculiar to itself, especially by those resulting from national character, and from political, social, educational, and geographical circumstances. Some have sprung from transient conditions, some from the idiosyncrasies of their founders, and some even from the follies and sins of selfish partisans. Other differences are rooted in far more permanent distinctions of nations and classes, and represent persistent rival tendencies in the thoughts and tastes and habits of man. All of

these, since they exist, and are used as instruments of the Holy Ghost, have in that fact a providential justification. And each one, even the least significant, emphasizes some otherwise too much neglected side of the truth, and is therefore, in its day, necessary to the completeness of the whole.

It is evident, therefore, that while the Church of Christ necessarily tends to self-organization under ordinary conditions, and to different forms of organization under different conditions, nevertheless organization itself is not of its essence. The Church exists antecedently to and independently of any organization, and its far larger part, embracing all mankind of all centuries dying in infancy, extends indefinitely beyond all organizations. All the more it is certain that no special form can be essential to the existence or even to the integrity of the Church.

As the outward form should express the true character of the informing spirit, of course, in an ideally perfect state the essential unity of the Church, as well as all other permanent characteristics, must find expression. All radical diversities, all irreconcilable oppositions, all bigotry, jealousy, alienation, and strife must be eliminated. But all unity implies relation, and all relations imply differences, and the sublime unity of the Catholic Church, of all peoples, and of all generations, implies the harmony of incalculable varieties. The principle of the union is spiritual and vital, and hence must be the result of an internal growth. The more perfect the inward life, the more perfect will be its outward expression in form. The final external form of the Holy Catholic Church will never be reached by adding denomination to denomination. It will come as all growth into organized form, alike in the physiological and in the social world, comes, by the spontaneous action of central vital forces from within.

All living unity implies diversity, and just in proportion to the elevated type and significance of the unity will be the variety of the elements it comprehends. In the barren desert each grain of sand is of precisely the same form with every other grain, and therefore there is no organic whole. The life of the world results from the correlation of earth and sky, of land and sea, of mountains and plains. All social unity springs out of the differences between man and woman, parent and child, men of thought and men of action, the men who possess and the men who need. No number of similar stones would constitute a great cathedral. No number of repetitions of the same musical sound would generate music. Always where the most profound and perfect unity is effected, it is the result of the greatest variety and complexity of parts. This law holds true through all varieties of vegetable, animal, and social organisms, and is revealed equally through all the pages of the geologic records.

Certainly God appears to be preparing to make the ultimate unity of the Church the richest and most comprehensive of created forms in the number and variety of its profound harmonies. It would have been a very simple thing at the first to form a homogeneous society out of the undifferentiated family of Adam, numerically multiplied. But for thousands of years God has been breaking up that family into a multitude of varieties, passing all enumeration. In arctic, torrid, and temperate zones; on mountains, valleys, coasts, continents, and islands; in endlessly drawn-out suc-

cessions of ages; under the influence of every possible variety of inherited institution; in every stage of civilization, and under every political, social, and religious constitution; through all possible complications of personal idiosyncrasy and of external environment, God has been drawing human nature through endless modifications. All these varieties enter into and contribute to the marvelous riches of the Christian Church, for her members are "redeemed out of every kindred, and tongue, and people, and nation." And all these are further combined into all the endless varieties of ecclesiastical organizations, monarchical, aristocratical, republican, and democratic, which the ingenuity of man, assisted by all complications of theological controversy and of social and political life, has been able to invent.

Who then shall guide all these multitudinous constituents in their recombination into the higher unity? Shall it be accomplished by a process of absorption into some ancient society claiming to be *the Church*? Shall it be helped forward by the volunteered offices of some self-authorized "Church Congress"? A time can never come when many of these differences so evidently designed will be obliterated. But undoubtedly a time is soon coming when the law of differentiation, so long dominant, shall be subordinated to the law of integration, when all these differences so arduously won shall be wrought into the harmony of the perfect whole. The comprehension of so vast a variety of interacting forces must be left to God. His methods are always historical, and his instruments are all second causes. He alone has been cotemporaneous with the Church under all dispensations, and omnipresent with the churches of every nation and tribe, and with Him "a thousand years are as one day."

The sin of schism is unquestionably very common and very heinous. In its essence it is a sin against the unity of the Church. If this unity were external and mechanical, then all organic division or variety would be schism. But since the principle of unity is the immanent Holy Ghost binding all the members in one life to Christ its source, schism must consist in some violation of the ties which bind us to the Holy Ghost, or to Christ, or to our fellow-members.

Hence all denial of the supreme Godhead and Lordship of Christ is schism. All denial of the body of catholic doctrine, common to the whole confessing Church, and embraced in the great ecumenical creeds, is schism. All sin against the Holy Ghost, every breach of the law of holiness and defect in spiritual-mindedness, tends to the marring and dividing of the body of Christ. All pride, bigotry, and exclusive churchism; all claim that the true Church is essentially identical with a certain external organization or form of organization, or with a definite external succession of officers; all denial of the validity of the ministry and sacraments of any bodies professing the true faith, and bearing evidence of the presence of the Holy Spirit, is schism. All party spirit, jealousy, and selfish rivalry; all unnecessary multiplication of denominational organizations; all want of the spirit of fraternal love and coöperation in the service of the common Master, tends to the marring and dividing of the body of Christ.

If this be true, it is evident that the real union of the churches can best be cultivated by promoting the

central spiritual unity of the Church which comprehends them all. For this end all who call themselves Christians must with one purpose seek to bring their whole mind and thought more and more into perfect conformity to the *Word of God* speaking through the sacred Scriptures, and their whole life and activity more and more into subjection to the control of the Holy Ghost dwelling in the whole body and in all its members alike. This process must, of course, proceed entirely from within outward, never in the reverse direction. Organic unity will be the result of the co-operation through long ages of an infinite variety of forces. It cannot be brought about by any system of means working towards it directly as an end in itself. All such unionistic enterprises are prompted by many mixed motives, some of them essentially partisan and therefore wholly divisive in their real effects. But hereafter in God's good time the result will come as an incidental effect of the ripening of all the churches in knowledge and love and in all the graces, and especially of a whole-souled self-forgetful consecration of all to the service and glory of their common Lord.

It appears to us that the very felicity of the title affixed by Dr. Shields to his graceful article renders it all the more illusive. The United States are all similarly organized republics, established in different though adjacent territories. The united churches of these United States, on the contrary, are incongruous ecclesiastical organizations, competing as rivals on the same territory. We differ also from the Doctor in our estimate of the comparative hindrances to union severally presented in the departments of dogmatic profession, of ecclesiastical order and government, and of liturgical culture; and we differ from him seriously in our reading of the tendencies of the age.

In the first place, we believe that doctrinal agreement could much more easily be effected than organic union or liturgical uniformity. Indeed, doctrinal agreement on the basis of a common creed confined to the essentials of the historic catholic Christian faith, relegating all other points of theological opinion to the schools, would be within the limits of English-speaking Protestantism a very hopeful undertaking, if only the great practical questions as to church government and worship were removed out of the way. The most dogmatically conservative and exacting among us freely recognize the common Christian brotherhood of all who cordially accept the essentials of the common faith. This has been practically exhibited on a wide scale, when the simple confession of the Evangelical Alliance received the spontaneous suffrages of all Protestant Christians, whether Lutherans, Arminians, or Calvinists. This dogmatic consensus, although general and confined to fundamentals, must necessarily be in the line of historic catholic orthodoxy. It must recognize a common source and standard of faith in the canon of inspired Scripture, the absolutely and only authoritative and infallible rule of faith and practice. It must embrace not the theories but the great essential facts of the supreme Godhead of Jesus, of his atonement, resurrection, government of the world, of his future and final judgment of all men. There can be no honest mutual toleration between those who hold and those who deny the supreme Godhead of our Lord. If they are right, we are the most gross of idolaters. If we are right, "they have made God a liar, because

they believe not the record that God gave of his Son." And the whole scheme of doctrine and life depends upon the conception we form of Jesus, and the consequent attitude we assume to him.

We believe that the difficulty will be found far greater in the department of ecclesiastical constitution and government; and that not because it is felt to be more vitally important than that of dogmatic faith, but because it is concrete and practical, and because it is the very thing involved in this *organic* union it is proposed to bring about. The several competing principles of church constitution involve antagonistic dogmatic principles, which in this sphere of organic union cannot be ignored, while the very situation demands their practical application. It is worth noticing that the most prominent and confident advocates of organic union are Congregationalists or Episcopalians, representatives respectively of the extremes of the utmost possible organic indeterminateness and independency, and of the utmost possible hierarchical authority and organic immutability. Each of these parties appear to believe that the union of the churches can be effected only by the assimilation of all other bodies to their own. On the same principles, the centers being changed, we would all advocate organic union. It is quite certain that neither extreme will prevail in the universal Church. It is safe to predict that the historic Church will never admit the principle of independency, and that the churches of the Reformation will never organize upon any principle that involves the repudiated dogmas that the Christian minister is a priest, that grace is mediated essentially by sacraments, and that the apostolic office is perpetual. In this I am sure that I speak for the forty million non-Episcopal Protestants of the English-speaking world. It appears to be as certainly true, on the other hand, that communities loyal to historic Catholic Christianity can never organize upon any principle involving the exclusion of the children of professing Christians from church membership. In this I am sure that I truly represent the seventy million Catholic and Pedobaptist Protestant Christians in the English-speaking world.

As to the prospects of union in the department of liturgical culture, we think that Dr. Shields has been misled by his tastes and wishes when he judges it to be the tendency of all denominations in the United States to adopt liturgical forms, and predicts that ultimately all will adopt in common the liturgy of the English Episcopal Church. It is not to be denied that such a tendency may be discerned among certain classes of the inhabitants of our large towns. But a wide induction of the changes which have taken place during the last two hundred years among the entire English-speaking population of the world leads to precisely the opposite conclusion. In the beginning of the eighteenth century, the Protestant inhabitants of the home of our race in Great Britain who adhered to the use of the national liturgy as compared to those who rejected it were in the ratio of five to one. Now, after nearly two hundred years, they stand in the same island in a ratio of rather less than one to one, in the colonies of the empire in the ratio of one to three, and among the "united churches of the United States" at a ratio of a little less than one to twenty-eight. This tendency prevailing among Protestants uniformly

wherever the English-speaking race extends, and for so long a time, seems to render it certain that the churches will not be united through the common use of the liturgy of the English Church.

It is undoubtedly true, as Dr. Shields asserts, that the specific varieties which have subdivided the great generic churches are gradually disappearing, being merged in their respective general masses. But it is also true that the great generic distinctions between the churches, as between Prelatic and Presbyterian, as between Baptist and Pedobaptist, as between Lutheran and Reformed, as between Independents and Churchmen, remain as sharply cut and as rigidly maintained as ever. At the same time new, distinct varieties are being generated among the Africans in our Southern States, and among all the nations of the earth with whom the labors of our missionaries are now beginning to meet with a world-transforming success.

A. A. Hodge.

Timber Famine and a Forest School.

SAVAGES live lavishly as long as their stock of food lasts, although they know they will have to starve afterwards. We say they can never climb out of savagery until they learn to save and to provide for coming want. Yet with respect to the forests — which are, no doubt, the most indispensable product of the soil — we have acted very much as the Comanche does with respect to his store of food.

The value of our forest products is not less than eight hundred millions of dollars a year. Our store of white pine is rapidly approaching exhaustion, and other valuable species will be as ruthlessly wasted when the pine is gone. When the resulting timber famine comes, it will for several reasons be a more serious calamity than would be the failure for ten consecutive years of any other of our crops.

First. No other product has so great a money value.

Second. Any other crop requires only a short time, usually a year, to reach maturity, while a forest needs from thirty to one hundred years.

Third. We know how to raise other crops, but to superintend financially profitable timber-growing requires a long and severe special training, such as is afforded in the state forests of continental Europe and in the professional schools connected with them.

Fourth. Failure, or even great scarcity, of working timber involves the derangement or total ruin of a vast number of important industries which wholly or in part depend upon the forest for their raw material. Some of these are metallurgy, building, wood-turning, tanning and the manufacture of articles made of leather, the making of wagons, carriages, furniture, musical instruments, sewing-machines, etc. In short, almost everything one uses needs wood directly or indirectly for its production.

Fifth. Destruction of the forest, especially upon steep hillsides, causes irregularity in rainfall and other climatic changes very harmful to agriculture, commerce, manufactures, and health, besides the loss from floods, of which during the last few years we have had such sad experience. It is estimated that the last

year's great flood in the Ohio cost sixty millions of dollars; and if the harm done by the much higher water of 1884 was less, it was only because that of 1883 did not leave so much property within reach of inundations.

But we shall never keep the hillsides wooded merely as a preventive measure. We must learn how to make timber-culture in such localities profitable; and that can never be done without skilled labor and such professional training for the superintendents of that labor as the forest schools of Europe afford.

The German Empire has nine such schools of a high grade; and France, Austria-Hungary, Switzerland, Italy, Spain, Portugal, Denmark, Russia, and Sweden have all made similar provision. In most of these countries there are also schools for training the forest officials of lower grades as well as the workmen.

In Germany graduation from a gymnasium, which is equivalent to the training given in most American colleges, is required before one can enter these higher forest schools. The course lasts from two and one-half to three years, and is so severe that only young men of more than common talent and industry can keep their place in the classes.

Then come ten years or more of hard study and practice in subordinate positions, after which, if one has acquitted himself well, he may hope for an appointment as district forester, but generally will have to wait longer before a vacancy occurs.

This long and arduous novitiate secures, of course, a high social rank for those who pass through it, and this creates so eager a desire for the position that there is never a lack of applicants, many of whom are from the best families. A few years since there were not less than thirty-three barons and knights employed in the crown forests of Prussia.

There are, too, many heirs of large landed estates who take this course so as to be fitted to take charge of their own forests, or at least to see that they are properly administered. Then there are many corporations organized for timber-culture, as it has been found that to be done to the best advantage it must be upon a large scale, since aside from other reasons it is only when so carried on that the services of properly qualified superintendents and workmen can be afforded. People of moderate means, therefore, must associate, if they would compete in the markets with rich proprietors and with the state.

A few words as to the nature and scope of the studies pursued in these schools.

First. Physical sciences. Here come in general and special chemistry, both inorganic and organic, physics, and meteorology, with thorough work in geology and mineralogy.

After this investigation of the "stuff" from which organisms are built comes botany in general and that of forests in particular, with microscopy. Next is zoölogy, vertebrate and invertebrate, with special attention to entomology, since insects are perhaps the worst enemies of trees. Withal, the art of making "preparations" of animal organisms must be mastered.

Second. Besides this work in natural science, which takes up about one-third of the school course, about half as much time is devoted to special mathematics, geodesy, interest and rent accounts, measuring wood, surveying, leveling, and plan-drawing.

Third. After these physics and mathematics, which